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THE I.C.I. MAGAZINE

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The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is edited by Richard Keane and printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, Imperial Chemical House, S.W.1. Telephone: VICtoria 4486. The editor is glad to consider articles for publication, and payment will be made for those accepted.

CONTENTS

FRONT COVER: THE ORIGINAL BUCKINGHAM PALACE, *from a contemporary engraving by Pugin and Rowlandson (reproduced by permission of The Parker Galleries). Buckingham House was built on the site of James I's mulberry gardens in 1703. It was bought by George III for his Queen in 1762 and renamed Queen's House; sixty years later it was altered by Nash at a cost of nearly a million pounds and renamed Buckingham Palace. In 1847 a new façade was constructed, and in 1913 this was entirely remodelled by Sir Aston Webb.*

OUR CONTRIBUTORS

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THE COST OF SHIPPING

Some Factors behind the Post-war Rise in Freight Rates

By Ronald Farquharson (I.C.I. Shipping Manager)

What are the reasons for the present high cost of shipping? And how far is it possible to reduce rates which in some cases threaten the loss of export markets? These and other pertinent questions are discussed by the I.C.I. Shipping Manager, who analyses the reasons for I.C.I.'s huge freight bill of six million pounds last year.

CONFRONTING me daily as shipping manager is one prime factor: in the thirteen years from 1939 to 1952 I.C.I.'s overall freight bill has risen from £1½m. to £6m. This is a rise of 300%. Yet the volume of shipments measured in tonnages has increased by no more than 25%.

Why should this be? What are the factors that have brought about this colossal rise in costs? They are worth exploring, but first it is necessary to understand something of the way in which our merchant navy is organised, and in particular to understand the conference system, of which mention is made in the newspapers from time to time.

Briefly, the conference system is a collection of British (and sometimes foreign) shipowners trading to the same ports abroad who agree rates of freight and certain other conditions of carriage among themselves. The object is mutual protection against one liner company undercutting the other for the favours of the exporter.

It is probably right to say that more than 90% of the prominent liner companies are members of an appropriate conference, as a result of which there are few "pirates" among liner companies to whom the shipper can turn if he is dissatisfied with the terms imposed upon him by the conference. As an additional inducement to play the conference they offer a 10% discount on all freights to shippers who sign an agreement with them to the effect that they will confine their shipments to vessels operating under the collective scheme.

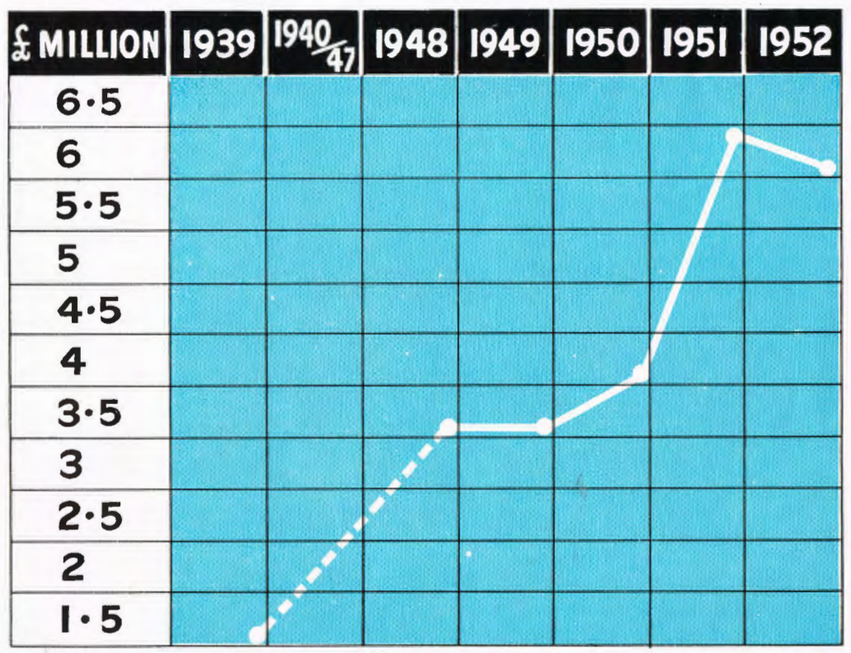
A lot of people take quite a dim view of this monopolistic method of collective security on the part of shipowners. But none the less it offers, over existing alternatives, very attractive advantages to large-scale exporters such as I.C.I. It affords us the priceless asset of continuity: that means instead of having to overstock an overseas market by shipping say six months' supply in an occasional outside vessel we can avoid distribution, storage, licensing and payment problems (outlay of capital) by spreading the same quantity over say twenty-four conference vessels sailing at regular weekly or even more frequent intervals.

As another alternative to employing conference vessels we could, of course, buy or charter vessels and run them ourselves. We could enter the tramp market instead of using the liners. But again we would lose that priceless asset of continuity, in addition to which we would never know beforehand the exact cost of shipping our various commodities overseas and—of even greater importance—unless we became common carriers our c.i.f. prices to overseas markets would have to include the unremunerative cost of bringing our ships home, more often than not, in ballast.

It may give a clearer and more accurate picture of the trend of freight rates since 1939 if we take a staple I.C.I. commodity like soda ash and observe how the gradual increase in ship operating has affected the cost of shipping this low-priced commodity overseas. On average the freight has risen by 200%—or three times its pre-war rate. Higher-valued commodities, by virtue of their more substantial return and powers of absorption, have been called upon to contribute a higher percentage than soda ash to the ever-rising costs connected with the operation of ships.

Generally speaking, in a seller's market British exporters have been in a position to afford these ever-increasing demands which have had to be imposed upon them by the shipping conferences. But now, as competition from abroad—particularly, it would seem, from ex-enemy countries—becomes more and more apparent, the exporter can no longer afford to maintain an even economy for the shipowner by offsetting his rising costs in the acceptance of higher rates of freight.

This aspect of the problem is potent with possibilities over the coming months and is indeed of paramount interest to the shipping management of I.C.I., whose job



I.C.I.'s freight bill, 1939–52

it is to see that not a ton of the Company's exports be lost through a crippling rate of freight.

Now, what are the various factors which have so greatly added in recent years to the liabilities of what is generally referred to as ship operating ?

By far the heaviest burden which has fallen upon shipowners is the cost of replacing tonnage—that means ships—lost in the war, or whose average life of about thirty years has extended beyond the time when they can still be classed as A1 at Lloyd's. It must be remembered that owners recovered from war risks only the 1939 replacement value on the vessels they lost during hostilities, and while some liner companies lost the greater portion of their fleets, one or two virtually lost the whole lot.

The 1939 value which they recovered on the lost components of their fleet would, on a vessel of average tonnage, be less than one-quarter the present-day cost of replacement. This in itself is an apt illustration of the tremendously swollen costs of raw materials, labour and paralysing delays in the shipbuilding trade. Furthermore, what is true of replacement applies equally to ship repairing.

Costly Delays

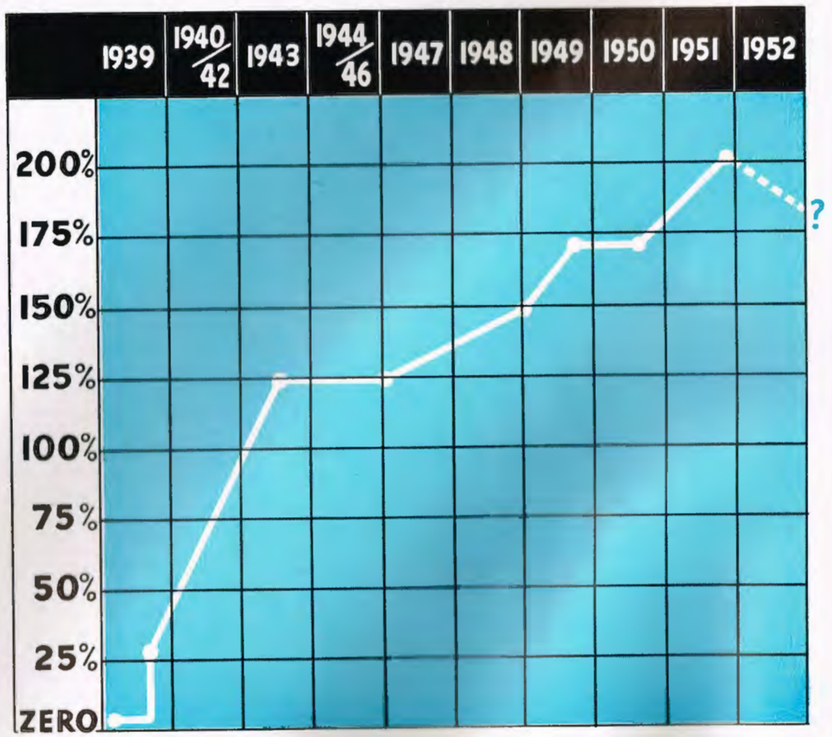
Then there is the appalling cost involved in the greatly retarded turnround of ships, both at home and abroad. Congestion, lack of berths and storage facilities, and the restrictive practices of dock labour in U.K. and foreign ports are factors contributing to this feature, which alone at least doubles and often trebles the cost of operating fleets. Ships only earn money while they are actually carrying goods, not while they are riding idle, either awaiting berths or alongside loading and discharging cargo—for a variety of reasons at less than half the speed at which these operations were performed in pre-war days.

Finally, to the cost of all this must be added the very substantial rises which have taken place in seamen's wages and the much higher prices which have to be paid for fuel oil and bunkers.

The reasons for the huge post-war increase in freight rates are not, therefore, difficult to understand. Nevertheless, if I.C.I. is to maintain its traditional markets overseas and continue to break new ground in exports, the point has now been reached when we just cannot afford to pay higher rates of freight: and in a good many cases we have already found it necessary to prevail upon the shipping conferences and the individual liner companies to reduce their tariffs. This is illustrated by the fact that over the last quarter of 1952 I.C.I.'s average overall rate of freight per ton shipped showed a reduction of £1 13s. 6d. per ton compared with the last quarter of 1951.

At the same time one should bear in mind that there is no diminishment in what it is costing the steamship companies to maintain their services: the tendency here is still definitely upwards. There is also more than a threat of increasing competition from the reviving merchant fleets—again of ex-enemy countries, particularly Japan and Germany, where shipbuilding is making rapid and somewhat ominous strides.

You will appreciate how this position is aggravated when I tell you that in Germany and in Scandinavia—and I have no doubt in Japan as well—a normal-size cargo carrier can be laid down and completed within six months. The very shortest time in which a British owner can expect delivery of a new vessel is certainly not under two years. But in some measure there are compensating factors of which Great Britain may be justly proud. She still builds the best-found ships in the world.



Freight rate increases on soda ash, 1939–52

THE LIVERPOOL WATERFRONT. *The Liver Building, a prominent landmark, is on the left, and in the centre is the Cunard Building, which houses the headquarters of General Chemicals Division. In recent months I.C.I. Shipping Department has moved from this building to India Buildings not far away.*

All in all, the outlook for 1953 is not a particularly happy one for the shipping industry. On one hand we have rising costs to shipowners, and on the other, diminishing returns to exporters, with growing competition to be faced both by shipowners and by the exporters alike.

It means simply this—that shipowners will be obliged to keep their freight tariffs continually under review and adjust them in accordance with any bona fide evidence furnished to them by exporters which shows that at their existing levels business will be lost not only to the exporter and the carrier alike but, more importantly, lost to the country as a whole. But always—in my view—it is up to exporters on their side to bear in mind the paramount difficulties which are facing shipowners under present conditions and avoid making approaches for reductions in rates of freight before they have examined the make-up of their own f.o.b. prices and also their margin of profit.

We in I.C.I. Shipping Department frequently have the unenviable task of holding the balance between the two factors—the exporting departments of Divisions and the shipping conferences. Indeed, we often regard ourselves as buffers—in more ways than one ! But we have established a reputation over the years of never making approaches to the liner companies or their conferences for lower rates of carriage unless they are positively justified; and therefore when we do make such approaches we invariably obtain the required adjustment which enables us to hold the particular market concerned.

It is my belief that the wider adoption of this principle among exporters as a whole, which will become increasingly necessary as time goes on, will result in the full maintenance of British export markets abroad and in the continued prosperity of the British Merchant Navy on sound economic lines.

One man and his job—11

COLOUR MATCHER

ALF TREADWELL does not go so far as to argue that white is black; but he told me quite seriously that white paint is partly black and that black paint is partly red, green and blue. After hearing this I was quite ready to believe him when he told me that some grey contains blue and red, and that red often contains black.

Alf is a colour matcher in the paint mixing section of the Paints Division factory at Slough, and the part he plays in the production of paint is much the same as the head chef's in the production of a meal. But where the chef says, tasting the soup, "Ah ! A little more salt needed here, a pinch of pepper and perhaps a small bayleaf," Alf can look at a sample of paint and say, "Ah ! A little more red needed here, a touch of yellow, and perhaps a few ounces of black."

Of course it is not really as easy as that, as I was able to see. Alf stood at a bench containing rack upon rack of small tins of paint and trays of metal plates with colour samples painted on them. From the mixing room came a man bearing a small tin of paint, a sample from a batch of 4000 lb. This paint had already been through several stages in the factory—the pigments had been ground, the varnish and solvents had been added—but before the final mixing could go any further it was up to Alf to say if the paint was the right colour.

The paint in question was called Balmoral Grey, and it is being used on car bodies this Coronation year. Alf showed me some on a palette knife. A nice bluish grey, I thought. Alf told me: "In that there's white, blue, black and red."

He stirred the sample energetically and dipped his palette knife in it. Then he held the coated knife against a metal plate painted with Balmoral Grey as it should be. The sample and the standard were not the same—even I could see that. What I could not see was how to put the sample right.

Alf looked at it critically, and then went away into a little cubby-hole lit by a daylight lamp. "What we need in there is more red, more blue and more black," he said. "Now I'll find out exactly how much."

He weighed out 100 grams of the sample to give him a known basis to work on. Now, armed with pots of red, blue and black, he poured in a little of one and a little of another—not at random, but taking careful note of the quantities he added. At the end of twenty minutes he seemed satisfied. "Now have a look," he invited me.

The sample on the palette knife, when he showed it to me, still looked different from the standard he held up against it. I wondered if I should mention it; after all, Alf was an experienced man, and probably my eyesight was at fault. However, I decided to be honest. "I'm afraid they look just a little different to me," I said apologetically.

Alf roared with laughter. "I'm glad you noticed it. Now, here's the catch. This Balmoral Grey is for cars, and after the makers spray it on the bodies they bake the paint in large ovens. You've got to be careful when a customer is using a process like that. We might send them paint that looked like Balmoral Grey when it was allowed to dry naturally but turned a greenish blue when it was stoved. When I'm matching colours I've got to allow for that. From the first batch or two of this grey we sent samples down to the lab to be stoved. After that we knew what effect stoving had on the colour and we were able to judge what the wet paint should look like."

It only remained for Alf to work out what quantities of colour should be added to the full batch. To his 100 gram sample he had put 2% red, 2% blue and 1% black, and a quick sum showed him that into the 4000 lb. of paint in the mixer they must tip 80 lb. of red, 80 lb. of blue and 40 lb. of black. After these colours had been mixed in, Alf said, there would be another colour check, and further adjustments might be necessary before the colour was finally matched.

Alf Treadwell and his colour-matching colleagues are nearly the last link in the chain of scientists and technicians at this factory. In the pilot laboratories are the men who compound the original paint recipes, carrying a tiny batch through all the processes in miniature; it is they who supply Alf with his standards. In other laboratories you can see paint drying in the air, in ovens and even in refrigerators, to reproduce the conditions the paint will meet in service.

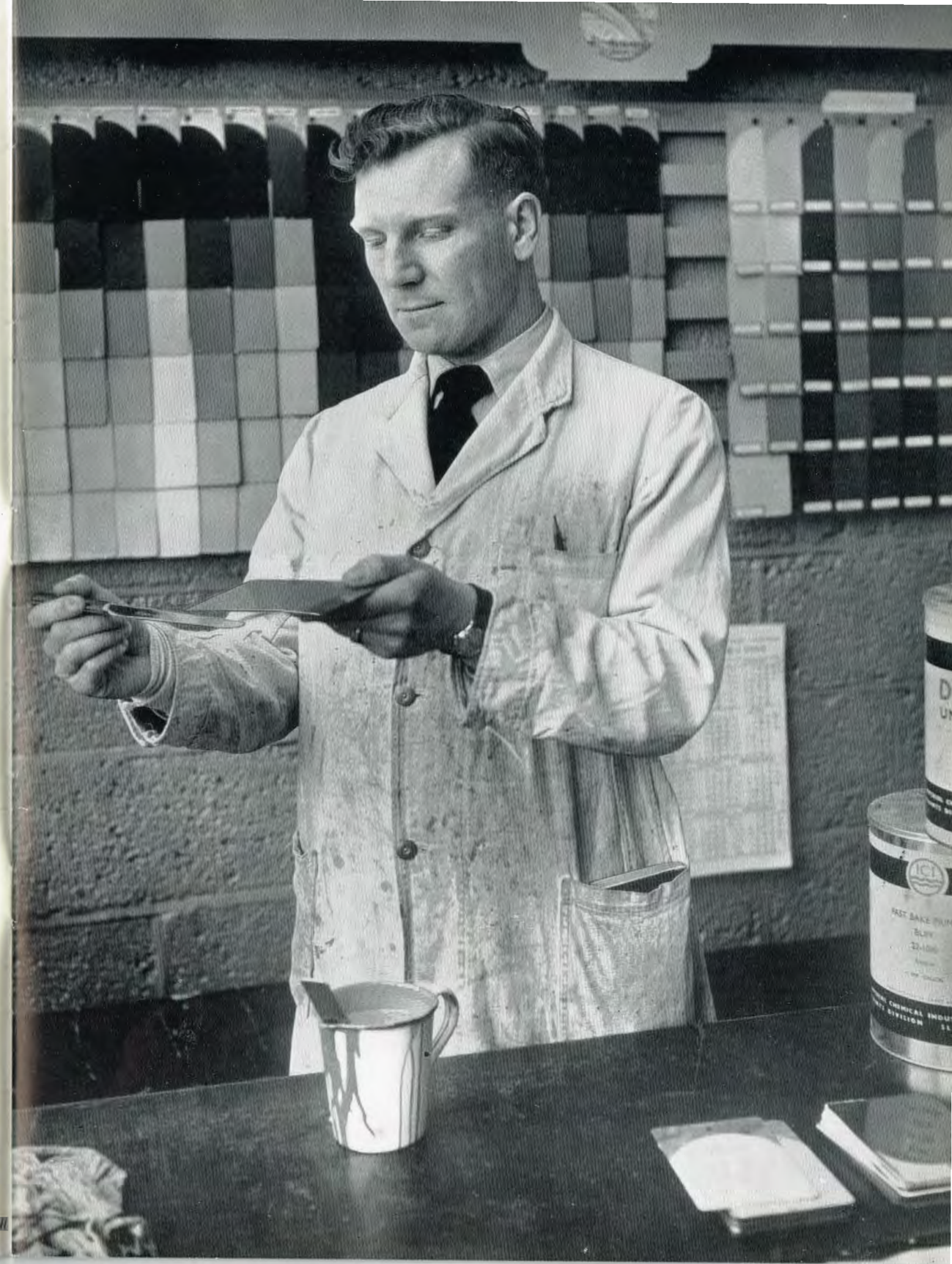
On the colour-matcher falls the final responsibility of making or marring a batch of paint weighing up to 20,000 lb. and worth hundreds of pounds sterling.

"Our colour vision is good, of course," Alf said, "but nothing special. What counts is experience."

I told him I was surprised no one had invented a machine that would analyse the colour of the paint exactly.

"They have," said Alf. "It's marvellous. It will tell you exactly what is wrong with a colour. What it won't tell you is how to put it right !"

M.J.D.



Alf Treadwell

CENTRAL COUNCIL

End of Staff Grade Quota Announced

THE Central Council meeting at Scarborough last month was generally voted an unusually successful one—successful as much for the happy, co-operative atmosphere as for the very popular announcement by Mr. E. T. Grint, Chief Labour Officer, that the much-disliked quota for promotion of workers to Staff Grade was to be abolished.

Unfortunately the sun let us down when he was most needed and the 150-odd councillors "who went to sea in a tub" found the North Sea, as have so many before them, somewhat chilly and rigorous. None the less, as one of the "seafarers" said, it was an incident in a full life to look back on. It was in fact very bad luck that such an excellent and original idea of the trip in the trim *Coronia* was not a complete success, while those who went to the circus had a very enjoyable evening.

These were, however, only interludes in the proceedings, and we must now say something of the main Council Meeting itself.

The Chairman in his introductory remarks expressed the regret of the whole Council at the absence of the Secretary, Mr. Alfred Inglis, due to sickness, and on behalf of all present sent him the wish for a speedy recovery and the hope that he would soon be back with us again.

After referring to the good press reports which the figures of the Company's year's trading had received in spite of the decline in profits, Mr. Rogers expressed his satisfaction at the recent Budget, which he thought was as good as could be expected. Confidence was in fact the keynote of the Chairman's remarks, for, as in national affairs so within the Company, he was certain we could go forward to yet greater successes if we all did our best. Higher productivity was essential and, according as this was achieved, if there should be difficulty in selling our products, then it was for the sales staff to redouble their efforts.

There can be no doubt that in his quiet manner and with his great wisdom the Chairman made us all realise that there is nothing for us to fear in the future which we cannot overcome, and it was a fitting end to such cheering remarks that he was able to announce that, to mark the Coronation, the Company had generously decided to give every employee and pensioner a tax-free gift of £1.

Then on a more serious note he asked the Acting Secretary, Mr. John Rhodes, to read the citation of the I.C.I. Bravery Award to the late Mr. Owen Davies of Powfoot Works, Nobel Division, for his conduct when a fire had broken out in a drying store; knowing that all present would be sad to learn that Mr. Davies had tragically met his death in a motoring accident since his gallant action.

After Mr. Tom McCall, the chairman of the workers' representatives, had thanked the Chairman and his colleagues for their generous gift and joined in the tribute to Mr. Davies, we passed on to receive the Company's reply to the motions asking for a review of the Staff Grade Scheme.

A New Approach

Mr. Grint told the meeting that the Board had decided on a new approach to Staff Grade appointment. They appreciated that the present quota arrangement might prevent an otherwise suitable worker from being promoted, and felt that a sounder and fairer method would be to define the qualities necessary for promotion to and maintenance of Staff Grade status. The worker suitable for promotion is "one who has proved himself reliable and willing, who exercises a good influence in the works, and can be trusted to respect the privileges which Staff Grade would confer on him," and provided the individual is considered to fulfil this requirement there will be no bar to his promotion and no limitation by quota in any factory.

Mr. Grint also explained that workers who are on Staff Grade will in future be reviewed from time to time to ensure that they are maintaining the qualities which they possessed when they were appointed.

The terms of the statement came as such a pleasant surprise that for a minute or so the applause was not as enthusiastic as one might have expected. Councillors soon got their breath, however. Mr. McCall thanked the Board; Mr. Hastings, in his own inimitable style, welcomed the news joyfully, stating roundly that one fact

The Chairman presents medals to the Gaskell-Marsh team of General Chemicals, winners of the First Aid Competition

Metals Division workers' representatives on their way to council. Left to right: A. Toon, W. Lissaman, F. Hartshorn, R. Schumacher, F. Allcock, H. Gaunt, H. Garratt, W. Thomson, M. Thomas, T. Davies and J. Hadley.

stood out—the quota was abolished. Mr. Hill's initial fears were soon dispelled by Mr. Grint, who informed the meeting that 91% of workers with 30 years' service are already on Staff Grade, each successive speech being more and more enthusiastic.

No pronouncement could in fact have been more happily received, and it was only a pity that representatives of the Alkali Division were beaten at the post to speak at the microphone, as it had been they who from the start had led the campaign for nothing short of complete abolition of the quota.

The Metals Division motion to enable employees with a break in service to take part in Works Council elections without the present delay was readily passed with minor amendments, and we were assured that it would receive careful consideration by the Company.

The next item for discussion was the Nobel resolution that employees undergoing annual training with H.M. Forces should receive full pay from the Company for the whole two weeks instead of for only one. It was explained that the payroll representatives had decided at their pre-meeting to support instead the Billingham motion that the Company should ensure that such employees would not earn less than the average earnings they would have received at work. After Mr. Hutton had explained that he felt that the real fault lay with the Government, who did not pay the Services enough, and after Mr. Hastings had pointed out that the purpose of the motion was just to ensure that a small minority would not be out of pocket during the fifteen days camp, the Chief Labour Officer warned the meeting that if the motion were passed employees undergoing training would have no incentive to join the Territorials or to obtain promotion. Nevertheless the resolution was given the support of the meeting and referred to the Company for consideration.

Mr. Tierney of Plastics Works at Hillhouse then introduced the motion that an I.C.I. tie should be made available for purchase by employees. It was a subject which gave the amateur comedians at the Council a chance to have their say. In fact, he argued so sincerely, wittily and effectively on the basis that no one would be *compelled* to wear the tie that he swung the meeting round to his point of view and the Plastic's motion was passed by 87 votes to 53—a victory which pleased the Chairman greatly, for although he admitted that he had not originally been attracted by the idea, he felt Mr. Tierney's speech was most sincere and deserved the support it had been given.

J. T. TIERNEY
advocate of the I.C.I. tie

The discussion which followed the Company's announcement with regard to allowances paid to workers' representatives on the Central Council was most amicable, for again the sense of goodwill which was so noticeable throughout the meeting ensured that a correct sense of proportion was maintained. "Skipper" Hastings, as he had been sprightly described by Mr. McCall, or "Disabled Seaman" Hastings, as he described himself, made an amusing speech asking that no deductions should be made in respect of functions organised by the Company; for he claimed that it was strange that the Company should deduct 5s. for the meal provided the previous evening and then send us all to sea (for which a further 5s. was deducted) thereby ensuring that the meal would be lost. Such sallies were all taken in good part, and Mr. Hastings was assured that his points would be considered.

After the presentation of medals to the Gaskell Marsh team of the General Chemicals Division, winners of the First Aid Competition, a most interesting discussion developed on a new resolution that all employees should be eligible to enter the competition. As the Chairman pointed out, the resolution embodied a completely new conception of the First Aid Competition, and although at first many present were very sceptical of the idea, especially Dr. A. J. Amor, Principal Medical Officer, who suggested that we might have a team consisting entirely of doctors, its supporters won some sympathy.

It was argued that there were many staff who should be keen on and proficient at First Aid, and it was only equitable that they should be able to take part in the competition, while Mr. W. Thomson (works manager,

Dumfries) drew attention to the illogicality of welcoming staff in Civil Defence activities but giving them the cold shoulder in first aid work. On the other hand, Mr. W. Adams (General Chemicals Division) felt that if the resolution were accepted we might lose more than we gained and reminded the meeting that the object of these competitions was to attain greater efficiency in first aid where it was needed—on the shop floor.

Mr. F. Grocott (Alkali Division) in a most statesman-like speech, considered that it would be unwise to come to a hasty decision. Any change which would help first aid in the Company should be welcomed, but at the same time great care must be taken to do nothing that might undermine the good work that was already being done. So it was on Mr. Grint's recommendation that the motion was not put, on the understanding that the item would be discussed again at the next Council and meanwhile there would be ample opportunity for the subject to be discussed in Divisions.

Synthetic Fibres

We then adjourned for lunch and a stroll in the sun, thereafter to reassemble to hear Mr. P. C. Allen's address on new fibres. It is never easy to keep the attention of a well-fed audience, but Mr. Allen succeeded completely with his most entertaining, instructive and all-embracing talk. Not only did he tell us of the history of synthetic fibres but also explained the problems behind their development and production, and filled us with confidence in the knowledge that I.C.I. is giving the world a lead in this important new industry. The Company can have little to fear from the future when it has decided not only to spend £3m. on development and £11m. to manufacture 'Terylene' at Wilton but also to erect in Canada a plant equivalent to the Wilton one.

There followed reports from Mr. J. A. L. Young and Mr. E. R. Lightfoot, head of the Pensions and Assistance Funds Department and Secretary of the Workers Friendly Society respectively, on the Pension Fund, Friendly Society, I.C.I. Savings Bank and other related organisations, while Mr. H. R. Payne reported on the safety campaign. The reports were uniformly satisfactory, the highlights being the much improved position the Friendly Society found itself in at the recent quinquennial valuation, the way the changes in the Pension Fund had become effective since last September—thanks largely to the good work done by the administrative staff—and that there were over 24,000 depositors in the Savings Bank, each with an average deposit of over £37.

Nor could there be any doubt the I.C.I. was second to none in safety-consciousness; and at the end of his remarks Mr. Payne asked the Chairman to present the Safety Cup to the Paints and Plastics Divisions, who had tied first during the second half of 1952, showing an improvement on their previous best figures of 39·5%; while the Company as a whole had achieved its lowest accident-frequency rate ever.

The motion that full benefit under the I.C.I. Sickness Benefit Scheme should be extended from 13 to 26 weeks was ably supported by Miss E. Boyd (Ardeer), who received a great ovation as the only lady to speak at the microphone. Mr. R. A. Banks, the Personnel Director, no doubt as a result of her persuasiveness, then intervened to say that the Board would give careful consideration to the request.

Redundant Labour

The final subject on the agenda was a motion from the Metals Division that it be made known that it is the Company's policy to absorb redundant labour, wherever it is practicable to do so, in other Company factories. The Metals Division have had, and are having, first-hand experience of this difficult problem, and Mr. Hastings was anxious that all should know how the Company did its best to fit redundant employees in elsewhere.

Feelings became a little strained when Mr. Allardyce contended that the subject was not a proper one to be discussed at Central Council, while one or two councillors had the idea that there was some ulterior motive behind its being raised. Mr. Grint made it quite clear, however, that the subject was in order, and after Mr. McCall had intervened with great discretion and tact, fears were largely allayed and the motion was carried by an overwhelming majority.

In his concluding remarks Mr. McCall told us two sad pieces of news. One was that Mr. Alec Wilson was retiring after 28 years' continuous service first on the committee of management then as a trustee of the Workers Friendly Society; the second was that he himself was retiring from the Central Council. The loss of both will be indeed great, and although no one is irreplaceable it will be a difficult task to follow in Tom McCall's footsteps, for there can be no doubt that he has been a first-class chairman of the workers' representatives and he will be greatly missed by his many friends. Typical of the man, he ended his remarks with a charming expression of loyalty to H.M. the Queen in this her Coronation year.

Although there may have been fewer controversial subjects than at other Central Councils, the spring meeting of 1953 was undoubtedly successful and valuable. The work done behind the scenes was as efficient as ever, for which much praise is due to the staff of the Central Labour Department, and while it may be invidious to mention individuals, one cannot but congratulate the Acting Secretary for the charming and thorough way in which he piloted us through the agenda. C.T.G.B.

THE SWALLOW-TAIL—*rare but very beautiful*

The Beauty of Butterflies

By E. F. Wood (Dyestuffs Division)

(*Colour photographs by W. Murray*)

THE first point to grasp about butterflies is that only two can be truly described as pests—the Small White and the Large White. The life's ambition of these two seems to be to make a cabbage leaf look like a filigree fan. (But even the erratic and apparently purposeless flight of the "whites" is attractive and in harmony with the deck-chair pleasures of a hot summer afternoon in the garden.)

Not one of the other butterflies cares a flap of the wings about garden produce. In the caterpillar stage of their existence they would not live a day if you tried to feed them on garden plants. Many live on nettles and thistles, grass and lowly weeds.

Butterflies assist in the work of fertilization, they gladden the eye of the nature-lover and add a charm to the countryside which everyone can appreciate.

What hand would crush the silken-winged fly,
The youngest of inconstant April's minions,
Because it cannot climb the purest sky,
Where the swan sings, amid the sun's dominions?
Not thine.

So wrote Shelley.

Butterflies are indeed extremely fastidious creatures in their diet. The caterpillar of the Duke of Burgundy Fritillary is partial to a nice dish of primroses and at a pinch will

CLOUDED YELLOW: *a migrant from the Continent*

RED ADMIRAL: *another Continental visitor*

SILVER-WASHED FRITILLARY: *a handsome woodland butterfly*

make do with some cowslips; but the Brimstone will eat only buckthorn, whether it be alder buckthorn or the purging type. The Whiteletter Hairstreak dies if it is not fed solely on elm leaves; while the Silver-studded Blue must have bird's-foot vetch to satisfy its delicate appetite. One caterpillar's food is indeed another's poison.

Of one type or another butterflies are to be seen in every sort of country. No matter where you walk or spend your holidays, if the weather and time of year are right you can find them even in unlikely places. And they will be most abundant where the food plant of the caterpillars is to be found. (One might even say the way to find a butterfly is through its caterpillar's stomach.)

The woodlands, the swamps, the mountains and the meadows all have their particular species. The Marsh Fritillary, the Mountain Ringlet, the Chalkhill Blue, the Wood White, the Heath Fritillary and the Meadow Brown are some whose names reveal their habitats.

Some of our British butterflies such as the Large Heath and the Scotch Argus are peculiar to the north of the country; others, like the Marbled White and the Essex Skipper, to the south. A few live in very restricted areas and a special journey is necessary to see them.

Among those butterflies which are only to be found in a particular type of environment are the Large Blue, the Black Hairstreak, the Purple Emperor and the Small Mountain Ringlet.

The latter, as its name implies, is a lover of high places and never flies below 1500 ft., and then only in the mountains of Perth, Inverness and the Lake District—you must climb Langdale Pikes or Ben Nevis to see the Mountain Ringlet. The Large Blue, which exists only where the wild thyme grows, can be seen in a very few places in Cornwall, Devon and the Cotswolds. The Black Hairstreak is confined to one or two wooded districts of Northamptonshire, Buckinghamshire and Huntingdonshire, where it was first discovered at Monkswood in 1828 and where it can still be seen despite the rapacious habits of the bug-hunters and the demands of agriculture. The Purple Emperor is a magnificent creature—unfortunately rare—whose kingdom is the oak woods of the western, midland and southern counties of England.

Seaside Varieties

Two of our most local butterflies, the Lulworth Skipper and the Glanville Fritillary, are maritime species. To see the former you must journey to the sea coast of Dorset or South Devon, and for the Glanville Fritillary to the cliffs on the southern shore of the Isle of Wight—for nowhere else in this country will you find these species.

A tendency for certain butterflies to increase their range in Britain has been noticed in recent years. The White Admiral (so aptly named the White Admirable by our forefathers) is now common in many woodland localities in the midland counties where it has not been seen before. Its way of life is as attractive as its appearance.

On the wing towards the end of June and during July it spends the whole of its pre-butterfly existence, from egg to chrysalis, on the honeysuckle plant. The young caterpillar even makes a winter retreat, in which to sleep, out of a honeysuckle leaf bound round with silken threads and fastened with more threads to a twig, so that when the leaves fall in autumn, cradle, caterpillar and all, stay suspended in the air.

Two other butterflies which can be seen in many new places are the prettily patterned, shade-loving Speckled Wood and the friendly, sun-loving Wall butterfly—a butterfly who willingly flutters up in front of you to show his charms in country lanes or over the meadows in the summer. The caterpillars of both feed on grasses.

Perhaps the most remarkable is the Comma butterfly, so named because of a white, comma-like mark on the brown under sides of its wings. This butterfly has now spread nearly all over England and Wales. It is quite unmistakable with its jagged-edged wings and bright tawny colours, and you may see it flexing its wings on the buddleia blossoms or michaelmas daisies till late in the autumn. The adults hibernate and pair in the spring, and if you ever see them casting a longing eye at your currant or gooseberry bushes tell them firmly that their young can be brought up just as well on a diet of wild hop and nettle.

The Swallow-tail

Only one of the ten butterflies chosen for illustration—the Swallow-tail—can be considered rare in this country. No excuses are offered for including it, since it is very beautiful and is the only British member of a family of extremely handsome butterflies, widespread throughout the world.

You can see the Swallow-tail by travelling to the fen districts of Norfolk and Cambridgeshire in May or June. Here, a month or two later, the green and black-banded caterpillar of the Swallow-tail will be found feeding on milk parsley. The butterfly can be seen too in many of the southern counties, particularly Kent; but these are of a slightly different Continental type which fly across the Channel during the summer months.

The Orange-tip, also a May–June butterfly, is distributed generally throughout the country up to the Caledonian Canal in Scotland. You will often find the Orange-tip where the cuckoo-flower and the watercress grow, but its caterpillar is not so choosy in its diet and will feed on such ubiquitous plants as charlock and hedge-garlic. The female, lacking orange-coloured tips to its wings, is not as distinctive as the male. Both have unusual green-mottled under sides—a cryptic coloration which makes them difficult to see when they settle among foliage.

SMALL TORTOISESHELL: *found everywhere in June*

PEACOCK: *its caterpillar will eat only nettles*

PAINTED LADY: *its caterpillar thrives on a diet of thistles*

ADONIS BLUE: *found on the southern downs*

ORANGE-TIP: *not found north of the Caledonian Canal*

CHALKHILL BLUE: *another downland variety*

The small Tortoiseshell and the Peacock seem very much part of our countryside. Both very attractive, they are to be seen throughout the length and breadth of the land. The former has been seen flying in nearly every month of the year but is most common in June and when the second brood comes out in August and September. It is a very pretty creature, and its caterpillars have the merit of eating nothing but stinging nettles.

The well-named Peacock, with "eyes" on all four wings, is more of an autumn butterfly, though the male and female can sometimes be seen in the spring on their nuptial flight after their long winter sleep. In April the female lays her olive-green eggs, like the Small Tortoiseshell, on the leaves of the common stinging nettle.

The Silver-washed Fritillary, selected out of nine of our native fritillaries, is a handsome butterfly with black-veined yellowish-brown wings. A fairly widespread woodland species, it may be encountered during July and August in practically all the Welsh, southern and midland counties. In this case it is the caterpillars which hibernate. When they are quite young and small they go down among the plant roots to escape the frosts of winter and are not seen again until they start to nibble the leaves of the dog-violet in the April sunshine.

The two Blues we have chosen, the Chalkhill Blue and the Adonis Blue, can be found on the chalk downs of southern England. Their caterpillars feed on vetches and clover, and both the females—unlike the human species—are less attractive than the males, having dark brown wings on the upper sides. The Chalkhill Blue is the commoner of the two and is on the wing in July and August. The Adonis Blue is more local, but can be seen in June and again in August, when the second brood emerges.

Continental Migrants

Our last three belong to a group of migrants who fly over from the Continent in the spring. Some of the migrants to this country—the Queen of Spain Fritillary, the Long-tailed Blue, the Bath White, the Bloxworth Blue and those two splendid creatures the Monarch and the Camberwell Beauty—are extremely rare. But those we illustrate—the Clouded Yellow, the Red Admiral, and the Painted Lady—are common everywhere in certain years.

The progeny of the early immigrants of these species can be seen flying strongly over the countryside, and even in our towns and villages, in the latter part of the summer and the autumn. Clover, lucerne and plants of the wild pea-flower family are the food plants of the Clouded Yellow. The stinging nettle is the main source of food of the Red Admiral's caterpillar, while the Painted Lady thrives on an unrestricted diet of thistle.

Not all the butterflies of our island have been mentioned, and this brief article only just touches on a subject which can be of absorbing interest.

Kings and Scientists

By Dr. Trevor I. Williams

(Deputy editor of *Endeavour*)

The debt of science to the Royal family is considerable. Charles II founded the Royal Society; George III supported Sir Joseph Banks in laying out the botanical gardens at Kew; and to Prince Albert we owe the 1851 science scholarships without which Lord Rutherford, perhaps the greatest of all atomic physicists, might never have come to England from New Zealand.

Royal interest in scientific matters may appropriately be said to have begun with James IV of Scotland, whose marriage with Margaret Tudor paved the way for the union of Scotland and England a century later. Not only did he rule at a time when true science was beginning to emerge from the mysticism of earlier centuries, but he was himself an enthusiastic practitioner in the art. His experiments extended to chemistry, physiology and medicine.

Contemporary documents show that in his experiments in medicine James IV used to pay his patients—an example which one wishes the physicians of today would follow. Thus the following entries are found among the royal accounts: "To Domynico to gif the King leve to lat him blud xviijs" and "xivs to ane fellow because the King pullit furtht his tootht." James was patron of two noted alchemists, John Damian and Braun of Sanctandrois, with whom he carried out elaborate experiments in a fruitless search for the philosophers' stone.

The age of Elizabeth I demonstrated markedly the new intellectual independence which followed the Renaissance in Europe. The blind faith in ancient philosophers which had stultified scientific progress for centuries was shaken off and men once again dared to think for themselves.

In physics outstanding work was done by William Gilbert (or Gilberd), personal physician to Elizabeth I and James I, on magnetism and electricity. His great book, *De Magnete*, was pronounced a painfully difficult work even by the erudite Bacon. His investigations of the lodestone (magnetic iron ore) were of great importance in navigation, then one of the most absorbing topics of the day.

Elizabeth was succeeded by James I, perhaps the most learned of British kings. Although his academic interest lay largely in the direction of theological polemics, he certainly influenced the development of scientific thought through the encouragement he gave to Francis Bacon, whose *Novum Organum* appeared in 1620. In this monumental work Bacon stressed the importance of arguing only from proved facts and set out his ideas for improving man's condition by the application of scientific knowledge. Robert Boyle, who was born in the year after that in which Bacon died, bluntly expressed the scepticism of the age: "He that hath seen it hath more reason to believe it than he that hath not."

Few scientific discoveries have had a deeper significance than that of the discovery of the circulation of the blood by William Harvey. This discovery he published in 1628; four years later he was made physician to Charles I, who took a deep interest in Harvey's work and asked for many demonstrations before himself and his court. Charles often accompanied Harvey while the latter was studying embryology among animals in the deer parks at Hampton Court and Windsor.

When Robert Boyle was at the height of his fame there occurred a scientific event of great and lasting significance —the founding of the Royal Society in 1660 under the patronage of Charles II. Today this is by far the most famous scientific society in the world, and throughout the greater part of its long history it has had a profound influence on the development of science in Britain; it is still governed by the charter given to it by Charles in 1662.

Reproduced by courtesy of the Royal Institution

FARADAY LECTURES *to the Royal Institution in the presence of H.R.H. Prince Albert*

George III left his mark on British science in many ways. It was, for example, he who made available the £4000 necessary to defray the cost of Captain Cook's expedition which, in 1768, took a party of scientific workers to the South Pacific on a voyage of exploration and to observe the transit of Venus, which occurred in 1769.

This voyage brought to the fore Sir Joseph Banks, a botanist and one of the great scientists of the age. On his return to England Banks became an intimate friend of George III and his scientific adviser. The King's patronage secured for Banks the directorship of the botanic garden at Kew; under his inspired guidance it became the most famous of its kind in the world and a great centre for the study of plants of economic importance. Through Banks the King, who was deeply interested in agricultural science, introduced into Britain the valuable Spanish merino sheep. Banks also interested the King in Rumford's plan for the Royal Institution, which received its royal charter in 1800.

George III left a lasting memorial to his scientific interest in the shape of a great collection of contemporary scientific instruments, to which some additions were made by both George IV and William IV. Many of these instruments—some of superb workmanship—are now in the Science Museum in South Kensington, though the collection has unfortunately been considerably dispersed. From 1769 the collection was housed, in the care of Stephen Demainbray, King's Astronomer, in the King's private observatory at Richmond, in which he took a great personal interest. This building is now known as Kew Observatory.

Although George III had a real interest in science during his years of sanity, his judgment was not always sound. He was, for example, taken in by James Price, last of the alchemists to claim to be able to change base metal into gold, a dream which had captivated earlier sovereigns with empty treasuries. Moreover, he allowed himself to become embroiled in the absurd dispute over the relative virtues of rounded and pointed lightning conductors; the advocation of the latter by Benjamin Franklin, prominent among the American rebels, led to an illogical prejudice against them in Britain. The King is said to have tried to induce the Royal Society to reverse its support of the pointed variety but was coldly told by Sir John Pringle, then president: "Sire, I cannot reverse the laws and operations of nature."

Although Victoria herself took little interest in science the Prince Consort fully appreciated its national importance

Reproduced from the painting by J. Ackland Hunt by permission of Colchester Borough Council

A DEMONSTRATION OF MAGNETISM *by William Gilberd, the Royal physician, before Queen Elizabeth I*

and supported it as royalty had never done before; his early death was in this, as in many other respects, a grievous loss. His interest was direct, wide and sustained.

In 1845 Prince Albert became the first president of the Royal College of Chemistry, one of the parent bodies of the Imperial College of Science and Technology, which received its royal charter in 1907. He took his presidential duties seriously and was instrumental in inducing the great German chemist Hofmann to be the first professor of chemistry. Hofmann had many notable students: among them was William Perkin, discoverer of the first synthetic dyestuff in Britain, who may be looked upon as the founder of the organic chemical industry, which is today of such immense importance.

Albert's interest in, and support for, the great technical advances of the age were expressed in many ways. The inspiration for the Great Exhibition of 1851, for example, was mainly his. As is generally known, this was a considerable financial success; from the proceeds were endowed a series of scholarships which have assisted the early work of many eminent men of science. Among the latter was Lord Rutherford, perhaps the greatest of all atomic physicists; it was an 1851 Science Scholarship which first brought him to England. Albert was also, like George III, deeply impressed by the importance of agricultural science, and his farm at Windsor was an absorbing interest throughout his life.

In our own time the immense national importance of science has been generally recognised. No longer can the reproach be justly made, as it was little more than a century ago: "What Minister in Great Britain ever attempted to cherish the sciences or to reward those who cultivate them with success?"

Although administration of the great sums now spent by the government on scientific work of many different kinds necessarily falls upon various Ministries—the task now needing a staff of many hundreds—personal interest by royalty is still extremely stimulating. It is therefore very pleasing that the Duke of Edinburgh has shown himself so fully aware of the importance of science to the nation and has, despite the many calls upon him, given much time to its promotion. In this respect the best-known expression of his interest was his acceptance in 1951 of the presidency of the British Association for the Advancement of Science. His presidential address at the Edinburgh meeting was warmly applauded in scientific circles.

Queen Elizabeth

I.C.I. NEWS

THE QUEEN

THIS delightful portrait of Her Majesty, by the Hon. M. W. Elphinstone, first appeared on the cover of our January issue. As soon as the *Magazine* reached Divisions that month, requests began to come in for additional copies, and in I.C.I. works and offices all over the country the portrait has been cut out and mounted. But for those who were reluctant to sacrifice the cover of their *Magazine* we reprint the portrait this Coronation month.

The picture is one of the very few—and perhaps the only—four-colour portraits ever published of the Queen. Other colour photographs have, it is true, appeared in the press, but these have been artificially coloured by hand. Mr. Elphinstone is a relation by marriage of the Queen Mother, and it is in his capacity as a friend of the Royal Family that he has had the privilege of taking photographs of the Queen and Princess Margaret for many years. The portrait which we publish was taken after the Queen's marriage but before her accession.

The coronation of Queen Elizabeth II will have stirred in many people memories of her father. By the time he was crowned, King George VI was already known and admired in industry. As Duke of York he was President of the Industrial Welfare Society, and his visits to works all over the country (including several of those belonging to I.C.I.) made it plain that his interest in industry was no mere official connection made necessary by his public position. He was ready to give a lead in improving the lot of the working man. As he said once: "We are out to brighten the lives of our fellow citizens in the workshops, to count them as men and women and not merely as instruments of production."

It is with such thoughts of her father that we see Queen Elizabeth ascend the throne. Already well loved by her people, she reigns in the knowledge that each year will bring greater love and esteem.

On behalf of our readers we say: "Long live the Queen!"

ROYAL VISIT TO B.I.F.

During their tour of the Earls Court section of the B.I.F. the Queen and the Duke of Edinburgh visited the I.C.I. 'Terylene' and 'Ardil' stand. Her Majesty is seen here examining 'Ardil' protein fibre. With her are (left) Mr. A. J. Quig and (right) Mr. P. C. Allen.

I.C.I. and the Coronation

The people who were expecting to have the best view of the Coronation were those who planned to watch it on their own or neighbours' television sets. But to be on the spot at such a time is an unforgettable experience, and at least twenty-three I.C.I. people will be telling their grandchildren about it in the years to come.

They were all chosen to attend in some official capacity. From Billingham came Messrs. A. Jordan, P. Martin and D. Pope, who were on duty as members of the R.A.F. Regiment. They all belong to the 2608 (North Riding) Light Anti-Aircraft Squadron.

From Dyestuffs Division there were six representatives. Miss Helen Hunter, a tracer in the Division Engineering Department at Grangemouth, was invited to represent the Girl Guides of the Commonwealth at the ceremony in Westminster Abbey. Mr. A. E. Perryman and Mr. R. S. Brown of Nylon Works and Mr. A. J. Cotton of Huddersfield Works were selected as Territorials to line the Coronation route. Mr. Perryman, an ex-Regular Army warrant officer, is a sergeant in the 426 Durham Coast T.A. Mr. Brown is on the

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As we go to press we learn that MR. JOHN ROGERS *is to resign from the chairmanship of I.C.I. on 30th June and that he will be succeeded by* DR. ALEXANDER FLECK.

SOME OF THE I.C.I. PEOPLE AT THE CORONATION

A. E. PERRYMAN (*Dyestuffs*) | R. S. BROWN (*Dyestuffs*) | A. J. COTTON (*Dyestuffs*) | MISS S. HAMIL (*Nobel*) | R. DONNELL (*Nobel*) | MISS M. GARDINER (*Nobel*)

army's Emergency Supplementary Reserve, attached to the 57th Workshops Company, R.E.M.E. Mr. Cotton, 22 years of age, is a lance-corporal in the Queen's Own Yorkshire Dragoons of the Royal Army Corps.

Also from Dyestuffs Division was Mr. Bernard Stanhope, who at 17 years of age must have been one of the youngest officials on duty. An apprentice instrument artificer at Trafford Park, he was chosen for first aid duties with the St. John Ambulance Brigade. L./Cpl. Robin Taylor from Huddersfield Works was in the party representing the Yorkshire District of the Boys Brigade.

General Chemicals Division also contributed a first-aider. He was Mr. Arthur Davies, a rigger at Chance and Hunt Works, and he was a member of the Midland contingent of the St. John Ambulance Brigade. A Territorial, Mr. John A. Woodward, was present from West Bank Power Station.

No fewer than ten people travelled south from Nobel Division. Mr. T. C. Hamilton, deputy labour officer, Ardeer, was in the Abbey in his capacity of vice-president of the British Legion (Scotland). Two other members of the Labour Department were present: 19-year-old Miss Sarah J. Hamil, who as patrol leader of the 1st Kilwinning Land Rangers was in charge of the Ayrshire Guides on the procession route; and 18-year-old Miss Ray Curlett, one of three members of the Saltcoats No. 1 Company of the Girls Guildry to attend. The other two were Miss Annie Hamilton of Detonator Department (fuse heads) at Ardeer and Miss May McLelland, a clerk in Research Department at Stevenston. From the Girls Guildry Saltcoats No. 2 Company came Miss Susanne Rainey and Miss Betty Kerr.

Miss Margaret Gardiner of Westquarter Factory represented the 1st Redding and Westquarter Girls Guildry. One of the four officers in charge of the Scottish Guildry Contingent was Miss Nan Nicol, of Staff Department. Ardeer Factory Cadets were represented by Cadet Sergeant Richard Donnell.

Miss June Armstrong of Wilton Works, a member of the W.R.A.C. (T.A.), was one of the representatives of the Northern Command.

From African Department at Head Office Mr. J. M. Wollaston was selected as a Gold Staff Officer for the Abbey ceremony, with the duty of marshalling guests.

Celebrations

For most I.C.I. people Coronation Day was a time for local celebrations with their families. These celebrations have been supported in many ways by the Divisions. At Wilton, for example, Boy Scouts took on the job of building a beacon on Eston Nab, 800 ft. above sea level, with timber donated by Wilton Works from plantations blown down in the February gales. The beacon was to be lit at 10 p.m. on Coronation Day and accompanied by fireworks also given by Wilton.

Many works recreation clubs were planning special events near Coronation time. One of the most ambitious programmes was that of Billingham's Synthonia Club. Between 28th May and 7th June members were to be offered a choice of fifteen events, ranging from a dog show to a brass band concert. The I.C.I. Widnes Recreation Club was planning cricket matches, dances and a Coronation bowls main. There was also to be a special bowls handicap at Winsford, and the Middlesbrough Works of Salt Division was arranging an outing for employees and their families to Whitley Bay. The Alkali Division Band, as well as playing at local celebrations, had secured much-prized engagements in Manchester and Liverpool during Coronation Week.

In London the Chairman and Directors invited the entire Head Office staff of some 2000 to a cocktail party. This celebrated not only the Coronation but the completion of the post-war move back to Imperial Chemical House, and also afforded the Directors, particularly those recently appointed, a chance of meeting members of the staff informally. Imperial Chemical House was decorated by day and floodlit by night, and Nobel House, not far from Buckingham Palace, was also decorated. From Gloucester House, in Piccadilly, the only London office on the Coronation route, some 100 members of the Southern Region staff and their wives were able to get a grandstand view of the procession.

RETIREMENTS FROM THE BOARD

Sir Wallace Akers (Research Director) and Mr. W. F. Lutyens (Development Director) retired from the Board of I.C.I. on 30th April. Their places are taken by Mr. C. R. Prichard and Dr. R. Holroyd, both appointed to the Board last November.

Full accounts of their distinguished careers in the Company will appear in our next issue.

The Government has announced that Sir Wallace Akers is to be a member of the committee set up to devise a plan for transferring responsibility for atomic energy from the Ministry of Supply to a non-departmental organisation. The chairman of the committee is Viscount Waverley, a non-executive director on the I.C.I. Board.

During the last war Sir Wallace was director of the Government's Atomic Energy Research Project.

I.C.I. ENTERTAINS FARADAY SOCIETY

In April the Faraday Society, founded in 1903, celebrated its fiftieth anniversary in London. To mark this occasion the Chairman and Directors of I.C.I. invited the president, council and members of the Society and their ladies to a reception and dance at Imperial Chemical House.

The guests represented many different branches of science, both industrial and academic, in the United Kingdom. There were also representatives from France, Holland and Germany; the president, Professor H. S Taylor, F.R.S., had travelled from the U.S.A., where he is Dean of the Graduate School at Princeton University. They were received by Mr. S. P. Chambers, Sir Wallace Akers, Mr. and Mrs. P. C. Allen, Mr. and Mrs. W. F. Lutyens and Mr. and Mrs. J. L. S. Steel.

When the Faraday Society was founded (with Ludwig Mond as one of its members), the promotion of "electrochemistry, electrometallurgy, chemical physics and kindred subjects" was its aim. In 1951 the object of the society was redefined "to promote the study of sciences lying between chemistry, physics and biology." It has always had strong international sympathies, and of the present membership of 2200 some 600 members are from the distant dominions and colonies, the western countries of Europe, and the U.S.A. and South America.

ALKALI DIVISION

Recent Board Appointments

The Alkali Division has four new directors—Messrs. G. W. Innes, G. A. Richmond, E. Henderson and A. Renfrew.

Mr. G. W. Innes

Mr. G. W. Innes, Division secretary since 1948, has been appointed a Division director and will have in his care the Estate Department and the Alfloc Water Treatment Service. He will also continue in the position of secretary. Mr. Innes, a graduate of Jesus College, Oxford, joined I.C.I. as a commercial trainee in 1946 after having completed his war service as a lieutenant-colonel in the Royal Marines. He has been a delegate director of the Paper Goods Manufacturing Co. for over two years.

Mr. G. A. Richmond, our Home Sales manager since 1945, has taken over the position of Division Commercial Director responsible for home sales and for the Distribution, Supply and Technical Service Departments. A graduate in agriculture from the Perse School, Cambridge, and Queen's College, Cambridge, Mr. Richmond joined the staff of the sales department of Brunner, Mond & Co. in 1927. After travelling widely in Great Britain during the next eight years in the Company's service he returned to Winnington in 1935, and he has remained there ever since that date. Mr. Richmond saw active war service, mostly in Fighter Command of the Royal Air Force, in which he held the rank of Flight Lieutenant. He has been a director of I.C.I. (Export) Ltd. since 1946 and a delegate director of the Paper Goods Manufacturing Co. from 1950.

Mr. G. A. Richmond

Mr. E. Henderson

The new Production Director, Mr. E. Henderson, joined I.C.I. in 1928 as a chemist, having studied at Edinburgh University for his degrees of B.Sc. and Ph.D. After spending six years with the British Ethyl Corporation at Plumley from 1940 to 1946 he returned to Winnington, where he was deputy works manager from 1947 to 1950 and works manager from January 1950 until his recent appointment. Mr. Henderson succeeds Mr. F. Steadman, who has been appointed a visiting director of I.C.I. Plastics Division.

Mr. A. Renfrew

Mr. A. Renfrew, a member of the Plastics Division board, has been appointed a visiting director of the Division and with Mr. Steadman will be in charge of liaison between the two Divisions as far as polythene is concerned, and they will be responsible for all polythene matters.

Mr. Renfrew, a science graduate of Glasgow University, worked with both the Nobel and the Billingham Divisions before joining Plastics Division in 1940 to work for the Technical Service Department and on development matters. He has been Division Development Director since October 1945.

Mr. Steadman has been the Production Director from August 1950. Previously he had been head of the Technical Directors' Department. He is a director of the Magadi Soda Co. Ltd., I.C.I. Alkali (Australia) Pty. Ltd. and of the Khewra Soda Co. Ltd. He has only recently returned from a six weeks' whirlwind flight round the world visiting overseas branches of I.C.I.

Co-operation with Mexican Industry

Three members of the Division—Messrs. A. L. Davies, L. W. Grimke-Drayton and G. S. Alvey—are now in Mexico on an advisory mission to a Mexican alkali company that is interested in more economical methods of producing soda ash and caustic soda.

Just north of Mexico City is a dried-out lake bed measuring five miles by ten. Little vegetation grows there because the ground is contaminated with salt and soda, and some years ago attempts were made to improve the land by washing out the salt and soda. As land reclamation the experiment was largely a failure but from it has sprung the new alkali industry which the Division is about to help develop.

The lake bed is composed of a mud consisting mainly of a very weak solution of salt and soda. The solution is far too weak to be evaporated by any source of heat such as coal or oil, but nature has been kind in providing almost ideal conditions for solar evaporation—little rain, bright sunshine all the year round, and a very dry atmosphere. A solar evaporation pond has been built on the lake bed in the form of a spiral two miles in diameter, called the *Caracol*, from the Spanish word for a snail. The weak brine is evaporated in this pond before being pumped to the plant for its chemical treatment. This chemical treatment consists of carbonation to precipitate bicarbonate, which is then centrifuged and roasted to convert it to soda ash. Some of the soda ash is causticised with lime to produce caustic soda liquor.

The process is different from the ammonia-soda process which we practise in England; although there are kilns and finishing plant, there are no ammonia-soda distillers and absorbers. It is also very different from the process at Magadi, where nature has already done the evaporation and produced a thick bed of solid sodium sesquicarbonate.

BILLINGHAM DIVISION

Billingham Gypsum restores Fertility

Many thousands of acres of valuable farmland in eastern England are contaminated with salt from the sea which poured over them during the great storm at the beginning of February. While the salt remains the land will be unproductive; but one way of speeding up the elimination of the salt is to give the land a top dressing of gypsum. About 100,000 tons will be needed to treat the salt-contaminated acres, and I.C.I. has offered 30,000 tons from Billingham.

Billingham gypsum being loaded for despatch to the salt-contaminated areas of Britain's east coast

The first trainloads, of 420 tons each, have already been despatched to the Holderness area of Yorkshire. Further instalments will go to other flooded areas. The gypsum is being sold to the Ministry of Agriculture at the purely nominal price of 1s. per ton. It is produced at Billingham as a by-product of the phosphate plant; much is used at the Division's Casebourne Works for making plasterboard.

Although the gypsum treatment for flooded land has been used for many years in Holland, it has not previously been used in England. The gypsum is spread on the surface at the rate of 2½ tons to the acre, and either left on the surface or lightly harrowed in. Spreading is a problem, for the wet, clogging nature of the gypsum has so far defied all types of mechanical spreader. After trials carried out in the Stockton area, a Ministry spokesman said that no satisfactory method of spreading, other than by hand, had yet been found.

It is claimed that the gypsum method can cut as much as three years off the time required to bring back badly contaminated land to full production, but even with this speeding up it will be four years before cropping is back to normal.

DYESTUFFS DIVISION

Overseas Distributor's Long Service

Mr. M. H. Hashim, of Hashim and Cassim Ltd., Rangoon, who is our dyestuffs distributor in Burma, was recently presented with a certificate for 20 years' service by Mr. N. D. Harris, resident director of I.C.I. (Export) Ltd.

Mr. M. H. Hashim

Burly, jovial Mr. Hashim is one of our most important and hospitable distributors. To meet him in his trim sharkskin suit and smoking the inevitable massive Burma cheroot is to meet a personality—and a very pleasant, likeable one at that. If the meeting be in Calcutta or Rangoon it is likely to be followed by one of his famous invitations to a Chinese dinner.

Mr. Hashim, a Mohammedan hailing from Dhoraji in Sourashtra, India, has spent most of his business life in Burma and is now a citizen of that country. Before the war, as well as being the only I.C.I. dyes distributor in Burma, he was a dyehouse owner and an important yarn and piece-goods importer. When the Japanese invaded Burma he succeeded in getting to India, where he elected to become a distributor at Nagpur; this was followed by a further appointment in Calcutta. As soon as it became possible he returned to his favourite city, Rangoon, where he is popular and influential in Burmese business and Government circles. He relinquished his Nagpur interests and later joined I.C.I. (Export) Ltd., Pakistan Branch (as it was then), as a distributor in East Pakistan. Mr. Hashim is therefore connected with I.C.I. (India) Ltd., I.C.I. (Export) Ltd., Burma Branch, and I.C.I. (Pakistan) Ltd.

Coronation Year Council Chairman

One man who expects to work as hard after his retirement as before it is Mr. John Wild, who retired recently from Division Supply Department. He has been invited by the Droylsden, Lancs, Council to be their chairman during Coronation year.

This position will have few terrors for Mr. Wild, for during the last fourteen years he seems to have made a hobby of chairmanships. He was chairman of the Council from 1947 to 1948,

Mr. J. Wild

and since he became a Council member in 1939 has been chairman of various Council committees, chairman of the Divisional Education Executive, vice-chairman of the local road safety committee, and first chairman of the Droylsden County secondary school.

Mr. Wild was born in Droylsden and has lived there ever since, except during his service in the first world war, when he won the Military Medal. As well as being prominent in local government affairs he is deeply interested in the British Legion. He was branch secretary for seventeen years and is now president of the Droylsden branch and vice-president of the South Lancashire district committee. Recently he was presented with the Legion's highest honour—the gold badge—by the national vice-chairman of the organisation.

LIME DIVISION

Distinguished Visitors

Wednesday, 6th May, was a proud day for the Division. In the morning of a spring day such as only Derbyshire can produce, Mr. John Rogers, Chairman of I.C.I., making his first visit since 1938, toured the quarries and met many of the staff and workers. In the afternoon Mr. Tom Williamson, General Secretary of the National Union of General and Municipal Workers, paid a visit in which he met shop stewards and union members at Tunstead. And in the evening there was a Long Service Awards dinner presided over by Mr. L. B. Ryder, the Division chairman, at which the guests included Mr. Rogers; the Duke of Devonshire, who is Mayor of Buxton; Mr. Williamson; Mr. J. L. S. Steel, Group Director for Lime Division on the I.C.I. Board; Mr. R. A. Banks; Mr. C. R. Prichard; Dr. A. E. Mitchell; Dr. S. W. Saunders, and many others.

Mr. John Rogers and Mr. J. L. S. Steel at Hindlow Works with members of the Division Board and personnel of the quarry and kilns

In the fifteen years that have elapsed since Mr. Rogers' last visit many changes have taken place in the technique of getting limestone and the crushing, grading and burning of it. Symbolic of all these changes is the giant primary crusher at Tunstead, and here Mr. Rogers, like many other visitors before him, spent a fascinated quarter of an hour during his tour of the Division.

Sixty-three people (including two brothers and a brother and sister) received Long Service Awards at the dinner. "It is in these people who give a lifetime's service," said Mr. Rogers, "that the strength not only of this Division but the whole of I.C.I. lies." Mr. Tom Williamson, proposing the health of the recipients of the awards, said that such records of long service were a tribute to the good relations between management and workers "in this great national enterprise."

Mr. Tom Williamson meets shop stewards W. Hill and G. Storer at Tunstead Quarry

The Duke of Devonshire proposed the toast "Imperial Chemical Industries." The importance of the Division loomed large in Buxton, he said, and the importance of I.C.I. to the nation as a whole was so great as to be difficult to grasp. No one present at the dinner, he concluded, could fail to be impressed by the happy spirit that existed in the Company.

METALS DIVISION

Entente Cordiale

British, French and American flags were flying at Kynoch Works on 22nd April to mark an important event in the history of the factory's ammunition sections.

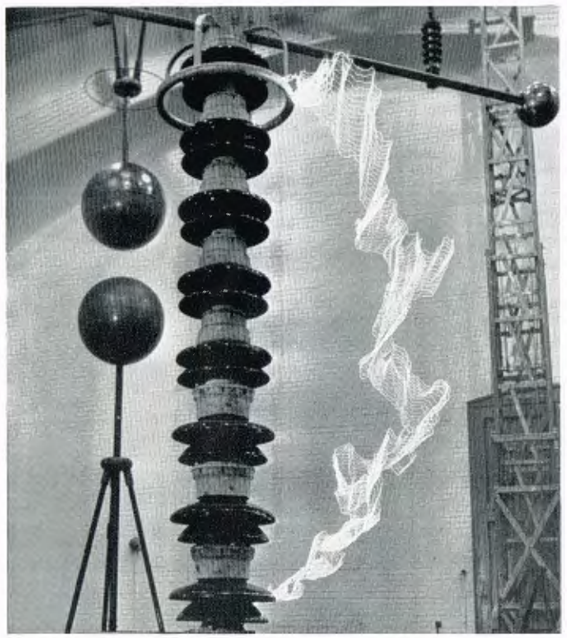
Taking delivery from Mr. J. B. Nevitt of ammunition for France are Chef d'Escadron M. A. de Montal and Mr. J. W. Morrison

Some months ago Metals Division was in the news as the recipient of a large dollar-earning contract for small arms ammunition, to be handed over to France under the U.S. Off-shore Procurement programme.

April saw the first stage of the $7,000,000 order completed, and Kynoch Works welcomed representatives of the French and American Embassies to take delivery of the consignment.

Powerful Assistance

The first consignment of the largest electrical post insulators so far made in this country has recently been delivered for installation at Staythorpe on the new British 275 kV Super-Grid. These insulators, which are for isolating switches and bus-bar supports, have just passed complete type and sample tests after manufacture at the works of Steatite and Porcelain Products Ltd. They have been designed to meet the requirements of the British Electricity Authority, their consultants and the British switchgear makers, representatives of all of whom witnessed the tests.



One of the largest post insulators ever made in Britain on test in the laboratory of Steatite and Porcelain Products Ltd.

The high-voltage laboratory of Steatite and Porcelain Products Ltd. has transformers for power frequency tests at voltages up to 1,000,000 volts r.m.s. and is one of the few laboratories in Britain where it is possible to carry out dry and wet flashover tests on these very high voltage insulators. Much of the apparatus needed for the extensive mechanical tests had to be specially constructed because of the size and strength of the insulators.

NOBEL DIVISION

Bravery Award Winner dies in Accident

Mr. O. W. D. Davies, a shift superintendent at Powfoot Factory, who was to have received the I.C.I. Bravery Award at Central Council on 8th May, died in April as the result of a road accident.

This sad news brought much distress to his friends, who remembered the dangerous circumstances in which Mr. Davies won his award. In Powfoot on 4th November, 1952, fire broke out in a drying stove which contained 3000 lb. of nitrocellulose powder. As one of the wooden trays was being pushed into the drying rack supports it caught fire.

The workers left the compartment and phoned a warning to the chief superintendent, who in turn arranged for trailer pumps to be brought to the fire. Mr. Davies had been relieved from shift but was still in the factory, and he hurried to the outbreak.

He saw that one drying bay was alight, that the next bay was empty and that the third, fourth and fifth bays were loaded with trays of powder. After throwing water at the fire he decided that by taking a calculated risk he might control the outbreak because it was localised and still quite small. He filled his polar boots (safety boots resembling Wellingtons) with water from a submerged bogey track at the door of the building, entered the compartment, poured water on the burning bay and extinguished the fire, so preventing the development of a major explosion.

Recollection of these circumstances made Mr. Davies' untimely death all the more poignant. Mr. L. Gale (personnel director) and Dr. A. G. Short (works manager, Powfoot) represented Nobel Division at the funeral in London.

PAINTS DIVISION

Twenty-first Birthday for 'Dulux'

Many I.C.I. people will have noticed that for the first time 'Dulux' paint is now being advertised in buses, Tube trains, newspapers and many other places.

This campaign to bring 'Dulux' to the notice of the general public, with the theme "Say 'Dulux' to your decorator," coincides with the paint's 21st birthday. It was first marketed in Britain for the painting of buildings in 1932, and has since made many firm friends in the architectural and building professions. More 'Dulux' is being used today by decorators than any other single-gloss paint.

Although the primary emphasis in the new advertising campaign supports the professional interest of the decorators, it is also recognised that many people do their own painting, and starting this year the sale of 'Dulux' is being extended to selected retail shops instead of being restricted to decorator's merchants.

The story of 'Dulux' began when I.C.I. chemists saw possibilities in new materials already known in U.S., Germany and at home, and developed them for use in building paints. As a result of their faith in these discoveries and their patience while craftsmen were weaned from traditional paints and practice to the new, 'Dulux' today holds its proud position in the decorating field.

The initial reluctance of the old school of craftsmen to use the new paint is easily understood. Generations of painters had looked upon "body" and "weight" as necessary in a first-class material.

'Dulux' was relatively thin, lighter in weight, spread much further with little effort in brushing, and dried much more quickly. It took a long time to prove to them and to architects that 'Dulux,' although thinner, could outlive the older paints literally by years. In due course, too, acceptance was gained

This 'Dulux' advertisement is appearing in London Underground trains

for a revolutionary practice, recommended in the use of 'Dulux.' This was that two gloss coats could be applied without intermediate rubbing down.

The continuity of 'Dulux' marketing was broken by World War II. Certain of the raw materials were required for high-priority war purposes, and manufacture was temporarily suspended. But surfaces painted in 'Dulux' before the war, and by force of circumstances not repainted during the war, gave some remarkable demonstrations of durability—even on the coast ten years was not unusual.

To the prime advantage of durability can be added several other benefits. 'Dulux' is made from chemically combined resins of uniform composition and not from natural gums, which inevitably vary in quality. This makes it possible to ensure accurate control at all stages of manufacture. Because 'Dulux' dries more quickly, after four hours it is unaffected by rain and flies and dust will not stick: it is hard in eight hours. 'Dulux' does not crack; it wears by slight chalking (thus providing a self-cleaning surface), and nothing more than a wash is needed before repainting if the repainting is done in time.

The range now includes seventy colours.

To play against Australia

The dream of every schoolboy has come true for that fine cricketer Mr. Chris Pickett, of Works Engineering Department, Slough. On the strength of his fast left-arm bowling, which assisted Bucks to win the Minor Counties Cricket Championship last season, he was selected to play against the Australian touring side when it met the Minor Counties in a three-day match over the Whitsun week-end.

An aggressive batsman as well as a bowler, Mr. Pickett is embarking upon his fifth season as a county cricketer. He played for Bucks in every match last season with marked success. A good all-rounder, he has played centre-half for the Slough soccer side, kept goal for the hockey team, and represented the site at tennis.

SALT DIVISION

A Weaver Family

Mr. John Robert Taylor, a Salt Division pensioner who died recently at the age of 72, was a member of one of the oldest families of Weaver watermen. Since the earliest days of the Weaver Navigation in the 1750's the Taylors have served on the river, and John Robert leaves a son, Ernest, to carry on the tradition.

John Robert's widow, no less than her menfolk, is part of the river's story, and the earliest surviving memories of the family are vested in her. When she married it was common custom for wives of watermen to live aboard the craft a week or more while it discharged its cargo in Liverpool. They knew the trade as well as their husbands. She remembers going at night to hold a lamp for her husband while he looked over his craft lying at Winsford during a week-end off. The boat was not just part of a job: it was part of their life. The whole family knew it as others know their own homes.

She tells of the tragic death of her late husband's grandfather, who was drowned in the Weaver while on duty. That was in the days when the barges were hauled down to the Mersey by horses and then hoisted sail for the port of Liverpool. She remembers how this ill-fated gentleman's son—another John Robert—met a similar end at Garston Dock. The dockside was a favourite haunt of ragged, hungry children who were befriended by the kindly watermen and often taken on board for a meal. It was while helping such a youngster on board that the other John Robert slipped between the craft and the dockside and fell to his death in the river, leaving two brothers to carry on the story.

She remembers Solomon, her husband's father, who captained salt craft even before the Salt Union Ltd. was formed in 1888, and her husband's brothers Tom and Sol, who also captained river craft. Her husband was captain of the *Vale Royal* after his father, but in later years he transferred to the *Standard*. Now one of her sons, Ernest, is captain of the *Standard*.

She has other sons, but they are not on the river. One served a full apprenticeship as a shipwright at the Salt Union Dockyard, Winsford, before entering the Church. He is now Vicar of St. Mark's Church, Hull. The end of the Taylor tradition is therefore in sight. Ernest has a son of 15 years, but he is not to follow in his father's footsteps. He is employed by a shipbuilding firm at Northwich, and one day he may help to build river craft and coasters. At all events he will be near the river that he loves and which has borne the Taylors so proudly down the years.

WILTON WORKS

He invented Cat's Whiskers

American electronics engineers predict that it will not be many years before the conventional radio valve is entirely superseded by transistors based on germanium crystals. The wheel has turned full circle, in fact, from the early days of wireless, when a crystal and "cat's whisker" were employed.

In Mr. R. Powley, of Wilton Supply Department, this new development stirs powerful memories. Mr. Powley was a merchant navy radio officer in crystal-set days, and it was he who invented the cat's whisker.

In the laboriously constructed crystal sets on which landlubbers listened to such stations as 5NO, the crystal, says Mr. Powley, was of galena or molybdenum. At sea they used sturdier crystals of carborundum, set in solder or white metal in a little brass cup. When Mr. Powley went to sea there was no cat's whisker, but a flat steel disc mounted on a strip of sprung steel made the contact with the crystal in which the necessary rectification of the incoming ether waves was effected. Carborundum crystals were rough of surface, and the steel disc could ride only on the peaks of the surface. Very often the operator would transmit a message on a sensitive spot on the crystal, only to find when he switched to "Receive" that local induction had made the spot insensitive. By the time he had located a fresh sensitive spot the answer might have been completed, unheard by him.

Mr. Powley solved this problem by inventing a cat's whisker. The whisker was actually the pointed end of a sewing needle attached to a spiral spring, and with this device it was easy to locate fresh sensitive spots on the crystal. Soon these "whiskers," in a slightly modified form, were being fitted as standard equipment. Until the change-over from crystals to valves took place Mr. Powley's invention gave invaluable service, of which he is still justly proud.

I.C.I. (JAPAN)

Long Service Staff at Kobe

In a recent issue we published a picture of Long Service staff at the Tokyo office of I.C.I. (Japan). We show here Long Service members of the staff at Kobe. They are (seated, left) Mr. S. Nomoto (30 years' service), Mr. S. Watanabe (27 years' service); (seated, right) Mr. K. Akatsuka (31 years' service), Mr. F. Fukutomi (31 years' service).

Seated between them is Mr. L. H. F. Sanderson, I.C.I. Overseas Personnel Officer, and standing behind is (centre) Mr. H. J. Collar, chairman of I.C.I. (Japan), with Mr. H. G. Harker, director, on the left and Mr. A. L. Hughes, I.C.I. (Japan)'s resident manager at Kobe, on the right.

I.C.I. (MALAYA)

In the picture above His Excellency the High Commissioner for Malaya, General Sir Gerald Templer, is shown cracking a joke with Mr. C. H. Tilley, the Kuala Lumpur director of I.C.I. (Malaya). The occasion was the opening at Kuala Lumpur of the Malayan Agri-Horticultural Association's show, where the Company had a large stand.

The stand was devoted to padi fertilizers, fertilizers and chemicals required for rubber cultivation and processing, pest-control and horticultural products. Some 11,000 people (and 4000 children) attended the show, as well as many state dignitaries, government officials and estate managers.

I.C.(P)

Tenants' Hall Restored

Since the announcement in 1950 of the purchase by I.C.I. of Alderley Park, ancestral home of the Stanleys of Alderley for more than 500 years, preliminary work on the new head-quarters and research establishment of Imperial Chemical (Pharmaceuticals) Ltd. has been going on, and the tenants' hall—all that remained of the mansion after it was demolished in 1938—is now restored.

During the first world war the tenants' hall was used by the Red Cross as a hospital, of which the late Lady Sheffield, grandmother of the present Lord Stanley, was commandant. For many years it was the scene of the Christmas performance at which the Alderley mummers entertained "My lord and his lady, together with servants and tenantry." Tradition claims that for 150 years only members of the Barber family were allowed to perform with the mummers. In 1937 the performance was broadcast.

Purchase of Alderley Park by I.C.I. recalls the purchase in 1873 of another property of the Stanley family, Winnington Hall near Northwich, which was bought by Brunner, Mond and Co. and now belongs to Alkali Division.

In April the I.C.(P.) representatives' annual technical conference was held in the tenants' hall for the first time.

* * *

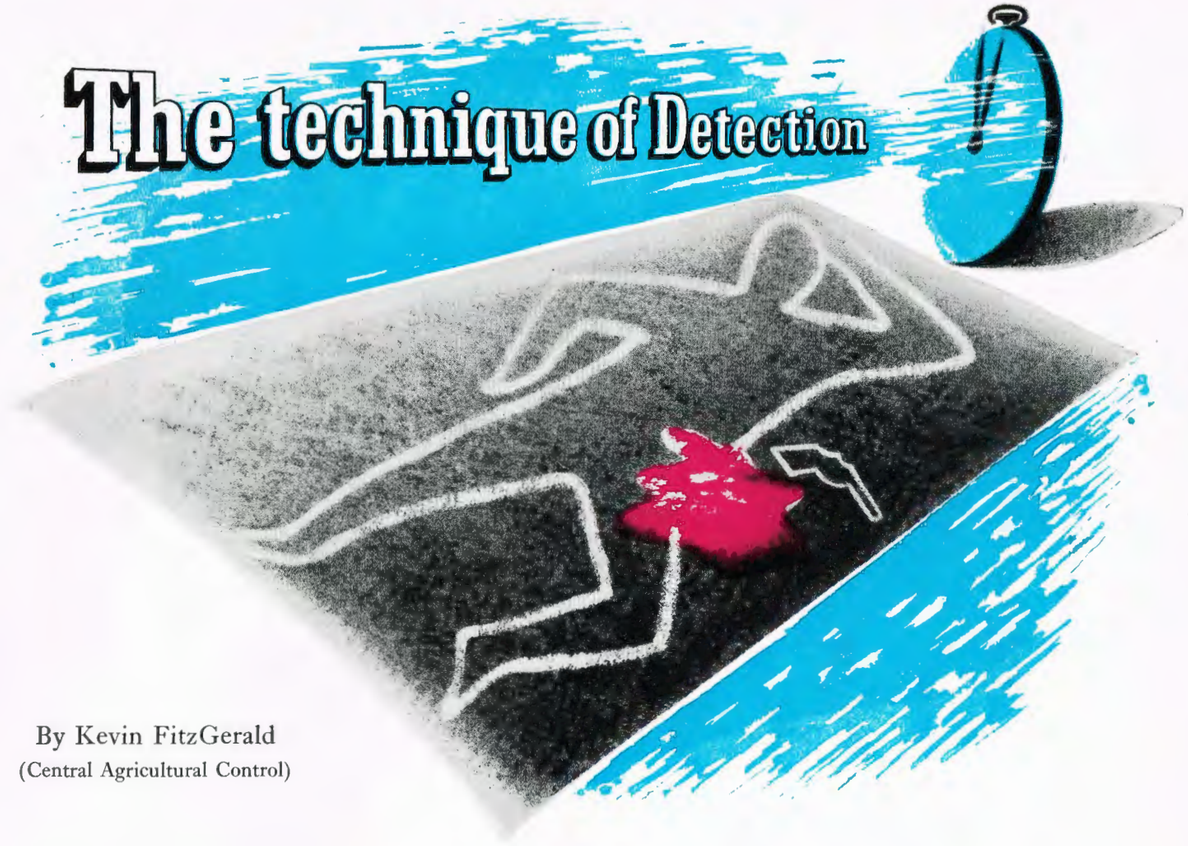
OUR NEXT ISSUE

We are featuring next month a rather remarkable example of private enterprise. In September 1951 a handful of men at the Kynoch Works, Birmingham decided that they had had enough of waiting for houses and would build their own. To-day these words are deeds. This band of determined men first of all got themselves trained in the skills of house-building and then last winter worked by floodlight to lay the foundations of their new homes. Our pictures show this night work going on and the houses now almost completed.

Our leading article tells the story of Fernhurst, which is the experimental horticultural station belonging to Plant Protection. Fernhurst is a 400 acre estate in Surrey. Much of it is run on commercial lines and pays its way. The story of why it was started and of the objects it has achieved is told by the Chairman of Plant Protection, Mr. T. Ainslie Robertson.

Our colour feature is concerned with the breeding of rabbits. Long years of selective breeding have produced rabbits with furs of quite remarkable beauty and colouring and some idea of this will be given by the photographs. Lastly, Mr. F. M. S. Harmar Brown tells how *not* to be woken up in the morning by means of an alarm clock which boils the water and brews the tea all in one.

The technique of Detection



By Kevin FitzGerald
(Central Agricultural Control)

The detective novel is part of our heritage. It began when Wilkie Collins wrote *The Moonstone* as a serial; developed into the immortal Sherlock Holmes; and recently has plumbed new depths when an Englishman in the R.A.F., entirely unfamiliar with America, wrote *No Orchids for Miss Blandish*. In this article Mr. Kevin FitzGerald, himself a noted writer of detective novels, traces the development of this peculiarly English form of fiction.

BASICALLY, in an English detective novel, the following events must occur. There must be a gathering of people varying between six and an upper limit of twelve. One of these persons must be such that he or she makes no appeal to the reader. That person dies violently before the end of Chapter 3. All other persons in the story except the amateur or professional detective, and sometimes a brash young couple, must automatically come under suspicion. All the movements of the characters as revealed to the reader must be consistent with their "having done it."

On this pattern endless variations have been imposed ever since the days when Charles Dickens was running the magazine *All the Year Round* and needed a serial which he asked Wilkie Collins to supply. Writing, for thirteen months, a weekly instalment to a printer's deadline, Collins produced *The Moonstone*. No one has since bettered Sergeant Cuff, the rose-growing detective who solved the mystery in clean and perfect detail, but got the wrong answer.

Just to show that he was not a one-book man when it came to mystery, Mr. Collins then obliged with the best thriller ever written, *The Woman in White* with a villain, in Count Fosco, to whose standards no fictional villain has yet begun to approach and an ugly heroine (never before attempted) with whom the whole country fell instantly in love. Indeed, Edward FitzGerald of Omar Khayyám fame at once named his boat after her. This writer is in love with Marian still. Any girl good enough for Fosco is good enough for him.

The detectives of the great masters vary enormously. Everyone has a soft corner for that patient, hard-working policeman Inspector French even though, since his recent promotion to superintendent, he seems to have lost a little of his characteristically painstaking touch. Lord Peter Wimsey, before his creator took the literary veil, was just getting into his stride as everyman's authority on wine and food and how to spread a courtship over twelve years and still bring it to a beautiful, if somewhat murderous, conclusion. The gay Mr. Campion still produces his scintillating master strokes egged on by his jailbird valet Mr. Lugg. Inspector Alleyn is still able to discuss

Hercule Poirot *Inspector French* *Sherlock Holmes*

paintings with his wife—also some years ago snatched from the shade of the gallows. Poirot, mercifully, is still with us, although Miss Christie, most unkindly, permitted his Watson to die some years ago.

It will not have failed to strike the reader that four out of the five detectives listed above owe their existence to women. So, of course, do the three women detectives—mostly engaged in knitting, witchcraft and similar harmless pursuits—who have been so much in the minds of true fans within recent years.

But none of these characters has ever measured up to the top waistcoat button of Mr. Sherlock Holmes. He is the only detective of fiction who has become part of the national life. Many of his problems and those of his "dear Watson" still exercise the public mind. How often, for example, was Dr. Watson really married? How did Sherlock Holmes square the stewards of the Jockey Club to permit Silver Blaze to run? What exactly was the chemical test on which a man's life depended? Many scholars have devoted long lives to these and scores of similar questions.

The master was unique. "You know my methods, Watson: apply them" never failed to baffle Watson as it continues to baffle us. How familiar it all is, and how charming. "By heavens, Holmes, this is miraculous! Have you eyes in the back of your head?" "I have at least a well-polished coffee pot in front of me, my dear Watson."

And the excitement? "The Band, the Band, the Speckled Band!" "Jump for it, Billy, and I'll swing!" "At least do me the honour of removing the cover and inspecting the dish." There are hundreds of such moments in the Sherlock Holmes stories and novels. And yet there was one above him, Brother Mycroft, of whom we know all too little except that he seldom left the Diogenes Club and was always consulted by Holmes.

In considering the technique of detection the lasting craze for and devotion to Holmes forms an excellent bridge across the Atlantic. In the United States the pre-Holmes era was represented in the field of detective fiction by horror tales based on the exploits of the Molly Maguires and the Pinkerton Agency.

After Holmes, in the States, came the deluge. Every sort of private detective was created, often with the background—curious to the British reader—of a corrupt police force. As time went on violence began to take the place of true detection and the long, carefully worked out stories of, say, Ellery Queen began to lose place to the nothing-barred, tough stories of Dashiell Hammett and Raymond Chandler.

It was, however, left to a modest Englishman serving in the Royal Air Force and entirely unfamiliar with the American scene to plumb the depths with *No Orchids for Miss Blandish*—a long drop indeed from the quiet beginnings of *A Study in Scarlet*.

It is a strange experience to browse through *The Moonstone* and immediately to follow this with *The Big Sleep* by Raymond Chandler. Or to compare in style and speed of development *The Hound of the Baskervilles* by Conan Doyle with *The Maltese Falcon* by Dashiell Hammett. Or to consider a pretty little detective novel like J. M. Cain's *The Postman Always Rings Twice* (which is written backwards from the Death House) in its relationship with, say, *Trent's Last Case* by E. C. Bentley. In the first violence, lust and jealousy, naked and unashamed. In the second all three passions unstated, but still there, in the development of one of the best detective novels in any language.

But there can be little doubt of a marked change in popular taste. "Action this day," as Mr. Churchill used to write on his directives during the war years, is the desire and demand of the detective novel reader.

Dr. Watson *Lord Peter Wimsey* *Dr. Gideon Fell*

At the moment, therefore, the fully documented, carefully worked out plots of the masters are somewhat out of favour. The present-day reader likes his first corpse on page 1 and preferably that he should be a witness to the killing. He wants factual detail as well. "The man on the roof swayed to the impact as the ·38 calibre soft-nosed bullet from an antique pattern Luger blasted away all his hopes and passions on this side of eternity." "They got me, Jake!" he sighed, and dropped over the parapet to the sidewalk two hundred and sixty-three feet below." Something like that.

He does not require any longer to discover the body of the ageing peer on page 132. "There was a look of horror upon the dead face, and Tranquil shuddered as he saw the handle of Delphine's hunting knife red against the stained whiteness of the evening shirt. His keen eye, even as he moved forward, picked out the strand of black cotton on the carpet at the dead man's feet." All that is out nowadays.

It is even a commonplace for the tired author to weary of a suspect too soon and to add him without a qualm to the general holocaust. "It's Steiner, Chief." "Yeah, and there goes our case." "Could be. But that don't eliminate 'The Grief'." And the author sets out gaily on the new line which has come to him in the watches of the night.

There is a danger in all this of the glorification of crime. The late George Orwell in his classic essay comparing *Raffles* with *No Orchids for Miss Blandish* saw all this. John Mair saw it the day "No Orchids" was published, and his review of that book in the *New Statesman*—I quote from memory—has never been bettered. It read: *No Orchids for Miss Blandish*, by James Hadley Chase.

Murders	8
Beatings-up	11
Goings-over	15
Rapes	3
Attempted rapes	5
Breakings-down	5
Sadistic incidents	11
Masochistic incidents ..	15

Nevertheless despite all changes of fashion the demand for the detective novel—now the detective thriller—by the reading public is never satisfied. In the Great Popularity Stakes, Marlowe and Spade, Lemmy Caution and Mr. Callaghan—all four hardly ever sober—may lead every now and again from Poirot, French, Alleyn, Sir Henry Merivale and Campion (with Sherlock Holmes quietly observing from his reserved seat in the grandstand), but in the end it is always a photo finish with the whole field widely supported and all up together at the post.

And, with all the writers of all the detective stories, there must be no tampering with the last three chapters which contain the dénouement and the detective's explanation. "You see it had to be Slesinger. I knew at once that he was lying about the grandfather clock because Chrissie, when she took up the morning tea to Sir Hector, noticed the dust on the handrail which Murphy had removed by seven o'clock. That was what confused me for a time—the absence of fingerprints and the neighing of the horse in the stable. Here, let me make out a timetable. . . ."

The toughest detective has to come to that at the end, and although the murderer has enjoyed a wonderful life of wine, women and song through two hundred and fifty pages (not any more these days) to the electric chair, the gallows or "the merciful bullet" he must come in the end. In these islands and, because of the Hayes Office, in the United States as well, crime must not be seen to pay, although for most of the story it may be allowed to pay extremely well.

Donkey rides at Clovelly

(Photo by John Chettleburgh)